

United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1450 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,879	11/20/2003	Richard Johnson	TRAN-P185	3080
WAGNER, MI	7590 09/27/2007 URABITO & HAO LLP	v	EXAM	INER
Third Floor Two North Market Street		•	TRUONG, THANHNGA B	
San Jose, CA 9			ART UNIT PAPER NUMBER	
		. •	2135	
		•	MAIL DATE	DELIVERY MODE
			09/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

mn

	Application No.	Applicant(s)				
Office Action Summan	10/719,879	JOHNSON ET AL.				
Office Action Summary	Examiner	Art Unit				
	Thanhnga B. Truong	2135				
The MAILING DATE of this communication ap Period for Reply	ppears on the cover sheet w	th the correspondence address	:			
A SHORTENED STATUTORY PERIOD FOR REPL WHICHEVER IS LONGER, FROM THE MAILING E - Extensions of time may be available under the provisions of 37 CFR 1. after SIX (6) MONTHS from the mailing date of this communication. - If NO period for reply is specified above, the maximum statutory period. - Failure to reply within the set or extended period for reply will, by statu Any reply received by the Office later than three months after the mailinearned patent term adjustment. See 37 CFR 1.704(b).	DATE OF THIS COMMUNION 136(a). In no event, however, may a start will apply and will expire SIX (6) MON te, cause the application to become AB	CATION. eply be timely filed THS from the mailing date of this communication. BANDONED (35 U.S.C. § 133).				
Status	•					
1)⊠ Responsive to communication(s) filed on 12.	July 2007.					
	is action is non-final.					
3) Since this application is in condition for allowa	ance except for formal matt	ers, prosecution as to the merits is				
closed in accordance with the practice under	Ex parte Quayle, 1935 C.D.	. 11, 453 O.G. 213.				
Disposition of Claims						
4) Claim(s) 1-23 is/are pending in the application	n.					
4a) Of the above claim(s) is/are withdra	awn from consideration.					
5) Claim(s) is/are allowed.						
6)⊠ Claim(s) <u>1-23</u> is/are rejected.	☑ Claim(s) <u>1-23</u> is/are rejected.					
7) Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/	or election requirement.					
Application Papers						
9)☐ The specification is objected to by the Examin	ier.					
10) The drawing(s) filed on is/are: a) ac	cepted or b) ☐ objected to	by the Examiner.				
Applicant may not request that any objection to the	e drawing(s) be held in abeyar	ice. See 37 CFR 1.85(a).				
Replacement drawing sheet(s) including the corre	ction is required if the drawing	(s) is objected to. See 37 CFR 1.121(d)).			
11) ☐ The oath or declaration is objected to by the E	Examiner. Note the attached	J Office Action or form PTO-152.				
Priority under 35 U.S.C. § 119						
a) Acknowledgment is made of a claim for foreig a) All b) Some * c) None of: 1. Certified copies of the priority documer 2. Certified copies of the priority documer 3. Copies of the certified copies of the priority application from the International Burea * See the attached detailed Office action for a list	nts have been received. nts have been received in A ority documents have been au (PCT Rule 17.2(a)).	pplication No received in this National Stage				
Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO/SB/08)	Paper No(Summary (PTO-413) s)/Mail Date nformal Patent Application				
Paper No(s)/Mail Date	6) Other:					

Art Unit: 2135

DETAILED ACTION

1. This action is responsive to the communication filed on July 12, 2007. Claims 1-23 are pending. At this time, claims 1-23 are rejected.

Response to Arguments

2. Applicant's arguments with respect to claims 1-23 have been considered but are most in view of the new ground(s) of rejection.

Applicant's arguments filed July 12, 2007 with respect to claim 22 have been fully considered and are persuasive. The rejection of 35 USC 101 has been withdrawn.

Claim Rejections - 35 USC § 103

- 3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 4. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al (US 6,983,374 B2), and further in view of Ellison et al (US 7,082,615 B1).
 - a. Referring to claim 1, 8:
 - i. Hashimoto teaches a memory architecture, comprising:
- (1) an unprotected memory space configured to store encrypted information, said encrypted information corresponding to a plain text version thereof (column 5, lines 30-33 and column 15, lines 66-67 of Hashimoto);
- (2) a first protected memory space configured to store at least a subset of operating system instructions (column 6, lines 20-29 of Hashimoto and Figures 2, 9, and 10 for memory partitioning); and
- (3) a second protected memory space configured to store said plain text version of said encrypted information (column 10, lines 5-10 of Hashimoto and Figures 2, 9, and 10 for memory partitioning);

Art Unit: 2135

Page 3

- (4) wherein said operating system instructions in said first protected memory space operate on said plain text version of said encrypted information in said second protected memory space (column 9, lines 35-38 of Hashimoto and Figures 2, 9, and 10 for memory partitioning).
- ii. Although Hashimoto teaches a memory architecture with authentication key, which is another term of message digest, Hashimoto is silent on the capability of disclosing his memory as a flash memory. On the other hand, Elisson teaches both message digest and flash memory in **column 8, lines 55-65 of Ellison**.
- iii. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to:
- (1) have modified the invention of Hashimoto with the teaching of Ellison to prevent illegal alternation of execution codes and processing target data under a multi-task program execution environment (column 1, lines 8-10 of Hashimoto).
 - iv. The ordinary skilled person would have been motivated to:
- (1) have modified the invention of Hashimoto with the teaching of Elisson to protect both the internally executed algorithm and the data state inside a memory region from illegal analysis in the multi-task environment even when the execution is stopped by the interruption (column 4, lines 58-62 of Hashimoto).

b. <u>Referring to claim 2:</u>

- i. Hashimoto further teaches:
- (1) wherein said encrypted information comprises an instruction to load said encrypted information from said unprotected memory space into said first protected memory space (column 10, lines 5-10 of Hashimoto and Figures 2, 9, and 10 for memory partitioning).

c. Referring to claim 3:

- Hashimoto further teaches:
- (1) further comprising one or more instructions to decrypt said encrypted information in said first protected memory space to form said plain text version (column 11, lines 21-26 of Hashimoto).

Application/Control Number: 10/719,879 Page 4

Art Unit: 2135

d. Referring to claim 4:

- i. Hashimoto further teaches:
- (1) wherein said encrypted information comprises an instruction to store at least one of (i) said encrypted information in said first protected memory space, (ii) said plain text version in said first protected memory space, and (iii) said plain text version in said second protected memory space (column 9, lines 35-38; column 10, lines 5-10 of Hashimoto and Figures 9 and 10 for memory partitioning).

e. Referring to claim 5:

- i. Hashimoto further teaches:
- (1) wherein said unprotected memory space is further configured to store executable code and data (column 15, lines 49-52 of Hashimoto).

f. Referring to claim 6:

- i. Hashimoto further teaches:
- (1) wherein said subset of operating system instructions comprises at least one member selected from the group consisting of: fetching or prefetching at least part of said executable code and data; interpreting at least part of said executable code and data; translating at least part of said executable code and data; and determining whether information in said unprotected memory space comprises encrypted information (column 10, line 56 through column 11, line 4 of Hashimoto).

g. Referring to claim 7:

- i. Hashimoto further teaches:
- (1) further comprising a third protected memory configured to store said plain text version after at least one operating system instruction has operated thereon (column 10, line 56 through column 11, line 4 of Hashimoto).

h. Referring to claim 8:

- i. The combination of teaching between Hashimoto and Ellison teaches the claimed subject matter. Ellison further teaches:
- (1) wherein said first protected memory space comprises flash memory (column 8, lines 55-65 of Ellison).

Application/Control Number: 10/719,879 Page 5

Art Unit: 2135

i. Referring to claim 9:

- i. The combination of teaching between Hashimoto and Ellison teaches the claimed subject matter. Hashimoto and Ellison further teaches:
- (1) wherein said first protected memory space further comprises a table linking said message digest to said plain text version in said second protected memory space (see Figures 9 and 10 and column 15, lines 46-48 of Hashimoto; and column 8, lines 55-65 of Ellison).

j. Referring to claim 10:

- i. Hashimoto further teaches:
- (1) wherein said table comprises a non-zero location of said plain text version in said second protected memory space (see Figures 9 and 10 and column 15, lines 46-48 of Hashimoto).

k. Referring to claim 11:

- i. Hashimoto further teaches:
- (1) wherein said first protected memory space further comprises a table or list linking a unique identifier for said encrypted information to a pointer for at least one of (i) a location of said plain text version and (ii) a location of a decryption tool for decrypting said encrypted information (see Figures 9 and 10 and further details on column 7, lines 42-50 of Hashimoto).

I. Referring to claim 12:

 i. This claim consist a system for operating on encrypted information to implement claim 1, thus it is rejected with the same rationale applied against claim 1 above.

m. Referring to claim 17:

i. This claim has limitations that is similar to those of claims 1 and 3, thus it is rejected with the same rationale applied against claims 1 and 3 above.

n. Referring to claims 18-21:

i. These claims have limitations that is similar to those of claims 1-8, thus they are rejected with the same rationale applied against claims 1-8 above.

Art Unit: 2135

Page 6

o. Referring to claim 22:

- i. Hashimoto further teaches:
- (1) wherein said protected memory comprises random access memory (see Figure 1, element 2103, where main memory is another name of RAM).

p. Referring to claim 23:

i. This claim consist a system for hiding information to implement claim 1, thus it is rejected with the same rationale applied against claim 1 above.

q. Referring to claims 13-16:

- i. Hashimoto further teaches:
- (1) wherein said unprotected memory space comprises at least part of a hard disk; said first protected memory space comprises at least part of a first ROM; wherein said second protected memory space comprises at least part of a second ROM; and at least one peripheral device configured to operate in accordance with said encrypted information (see Figures 1 and 2 of Hashimoto).
- ii. Although Hashimoto teaches the memory architecture, which is well known in the art that could be implemented into any computer system, Hashimoto is silent on the capability to show the entire computer system which includes the microprocessor, memory, and its peripheral. On the other hand, Ellison teaches these elements (see Figure 1 and column 4, line 38 through column 5, line 27 of Ellison).
- iii. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to:
- (1) have modified the invention of Hashimoto with the teaching of Barnett to prevent illegal alternation of execution codes and processing target data under a multi-task program execution environment (column 1, lines 8-10 of Hashimoto).
 - iv. The ordinary skilled person would have been motivated to:

Art Unit: 2135

Page 7

(1) have modified the invention of Hashimoto with the teaching of Barnett to protect both the internally executed algorithm and the data state inside a memory region from illegal analysis in the multi-task environment even when the execution is stopped by the interruption (column 4, lines 58-62 of Hashimoto).

Conclusion

- 5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
- a. Albrech et al (US 5,835,594) discloses methods and apparatus for preventing unauthorized write access to a protected non-volatile storage (see title).
- b. Albrech et al (US 6,510,521 B1) discloses methods and apparatus for preventing unauthorized write access to a protected non-volatile storage (see title).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhnga (Tanya) Truong whose telephone number is 571-272-3858.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached at 571-272-3859. The fax and phone numbers for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2135

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone

Unnling B. The Primary Example

number is 571-272-2100.

TBT

September 21, 2007

Page 8